John Stewart Bell Biography

John Stewart Bell

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Biography

John Stewart Bell was a humorous, peaceful quantum physicist of the twentieth century. His work encompassed many of the important issues in the development of **quantum physics**. Although he is remembered as a theorist, he demonstrated that he was skilled in the practical side of physics, as well. His doctoral dissertation addressed the issue of the reversibility of **matter** at the subatomic level. At other times in his career, he worked to improve the **proton** synchrotron and the particle accelerator. He is best known for the theorem that bears his name.

Bell's theorem seeks to explain the relationship between two particles traveling in opposite directions at equal speeds. This explanation relies on instant communication across distances and presents an equation for calculating the distant interaction of these particles. Although his logic is solid, there is little room for direct testing of his assumptions. Bell warned that all of the factors contributing to the communication between particles are currently unknown and unobservable. Still, his equation has made other experiments possible and has opened up a previously closed direction for research. An interesting interpretation of this theorem is the possibility that communication between particles may occur faster than **light**; however, Bell never upheld this conjecture.

Bell was born in 1928 to working-class parents in Belfast, Northern Ireland. He attended Belfast's Queens College. Because of his parents' financial condition, Bell worked while attending college as an assistant in the physics laboratory. He found it to be good preparation for his career and, after graduation, went to work at the Atomic **Energy** Research Establishment at Harwell.

When he was twenty-five, he took a year's leave to work on his doctoral dissertation at Birmingham University where he was remembered by Rudulf Peierls as being experienced and imaginative. Peierls especially remembers Bell as having a talent for readily offering an everyday example to illustrate even the most complex concept. After earning his doctorate, he married a physicist, and, in 1960, the Bells moved to Switzerland where he worked at the Centre European de Recherches Nucleaires (CERN). He was still working at CERN thirty years later when he died of a stroke at age 62.